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EMPYEMA OF THORAX, RELIEVED BY PARACENTESIS.

[Read before the Middlesex East District Medical Society, July 20th, 1864, and communicated for the Boston Medical and Surgical Journal.]

BY A. CHAPIN, M.D., WINCHESTER.

MARCH 9th, of the present year, I was sent for to see E. M., a boy four years old, suffering with severe pain in his abdomen and great restlessness. After a day or two, the symptoms, at first obscure, became more distinct. The restlessness and febrile action had increased, also the pain, which had become violent and was located in the right superior iliac region. The legs were habitually drawn up; constipation was persistent from the first, and unrelieved by accumulated cathartics and injections; the respiration restrained and with a catch, dry and puerile. At the end of five days, under the use of leeches, fomentations, mercurials, opiates, &c., the tenderness and obstruction had given way, and I left him on the fifteenth, sitting up and comfortable. The disease I had diagnosticated perityphlitis.

March 17th, two days later, I was again called, and found him covered with a rubeolous eruption on his face, neck and arms, great febrile action and restlessness; catarrhal symptoms—a cough, watery eyes and running at the nose; the respiration spasmodic and frequent, and a mucous râle in the right lung. The measles did not come out well, and soon disappeared, but the symptoms diminished in violence, and the boy became more comfortable and seemed improving, so that I intermitted my visits. Still the respiration continued oppressed, and exacerbation of symptoms re-appeared. A dulness on percussion showed itself, which soon extended over the whole right thorax; the respiratory sounds disappeared, and the febrile reaction became excessive—the pulse rising as high as 165.

April 3d, twenty-four days from the first attack and seventeen from the disappearance of the measles, his condition had assumed serious gravity. The right thorax measured two inches larger than the left; dull percussion extended over its whole surface; respira-

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tory sounds were absent; respiration became abdominal; the impulses of the heart were distinct under the left arm, it being pressed far into the left thorax; the head elevated; posture on the left side; pulse 128; respiration 90, spasmodic.

Dr. E. Cutter having been called to my aid, and concurring in the diagnosis that fluid filled the right thorax, with the use of Wyman's apparatus for thoracentesis he drew away twenty ounces of purulent matter. Breathing at once became steady and easy. On the next day he was found quiet, having had a tolerably comfortable night, but was sore and unwilling to be moved. For a few days he seemed to gain; his urine, which was highly lateritious, became clearer; the general oedematous effusion which pervaded him subsided, his appetite became good, and his whole appearance improved.

April 10th, seven days from the operation of paracentesis, his symptoms having recurred unfavorably, much as before, Dr. Cutter was again sent for, who introduced the trocar under the right scapula between the ninth and tenth ribs, and with the aid of Wyman's pump drew off nineteen ounces more of pus, followed by the same relief as before. The next day I found that, under the influence of Dover's powder, he had slept well, his breathing was easy, and his aspect comfortable. He continued gaining slowly for more than a week, when his symptoms became less favorable. Dr. Cutter again met me on the 21st, eleven days from the last operation. Respiration was then distinct on the right of the spine, and was less frequent; percussion nearly normal in the superior portion of the thorax; pulse 120; appetite poor; countenance pallid; much prostration; symptoms of pyhæmia. It was concluded not to operate again, as a pointing was found at the point where the trocar had entered. On the 24th, two weeks from the last operation, I opened the prominence with a lancet. Pus flowed freely, and the boy again improved slowly. A few days after, the mother informed me that wishing to do all that could be done for her boy, she had called a homœopathist, who would in future see to him; and so he passed from my care!

The child, as I learned yesterday, has varied much in its aspects and prospects the past three months since I lost the charge of it. The orifice continued to discharge, at one time closing and then re-opening, till a few weeks since, when it effectually closed and so continues. He now has an improved aspect in his countenance, breathes freely, but with an occasional catch, respiration is distinct under the right arm, lies on either side, sleeps and eats well, walks about out of doors, and seems to carry the aspect of recovery.

[NOTE.—Dr. Cutter reported the case of a man 50 years of age, a shoemaker, sick two weeks—effusion into right thorax—dulness on percussion, absence of respiratory murmur, no ægophony, immobility during respiratory act, fulness of intercostal spaces, no vocal fremitus. He drew off by a puncture, just below the lowest angle

of the scapula, seventy fluid ounces of serum on March 4th, 1864. Iodide of potassium, with cream of tartar and pumpkin seeds, internally, and iodine externally, completed the cure, which, as far as it is possible to discover, has been perfect and permanent.—SEC.]

POST-MORTEM EXAMINATIONS

OF CASES REPORTED ON THE MONTHLY REPORT OF SICK AND WOUNDED AT BASE HOSPITAL, 18TH ARMY CORPS, FOR MONTH OF JULY, 1864.

[Communicated to the Surgeon-General of Massachusetts by C. E. MUNN, Asst. Surg. of 27th Mass. Vols. and Executive Officer Base Hospital.]

CASE I.—Henry Williams, Co. D, 1st Conn. Heavy Artillery, was admitted to hospital July 1st, for a gun-shot wound of the chest, received the day previous. Ball entered below the right clavicle, an inch and a half from the sternum, and passed out through the left scapula near the middle of the inferior edge. Wound had been hermetically sealed by Dr. Howard, at the field hospital. Patient had since been under his care, and his peculiar method of treatment fully adopted. He died July 7th.

Post mortem made ten hours after death, by Dr. Wendell, N. H.; Drs. Munn and Emery, Mass., and Storrs, Conn., also present.

External Examination.—Chest well formed; wound in front; the appearance of being closed by metallic sutures a few hours before death; the wound of exit closed by adhesive straps and collodion. Two small wounds made by tapping on the right side were dressed in the same manner. The attendants report the first, made on the 3d inst., was between the sixth and seventh ribs, two inches back of nipple; the other made fourteen hours before death, between the fifth and sixth ribs. Percussion was *resonant* on the *right side*. On the left, somewhat dull.

Internal Examination.—The ball was found to have passed through the external and upper part of the sternum, entering the pleural cavity at the junction of the first rib, thence through the upper lobe of the left lung outward, backwards, leaving the cavity three inches from the spine between the third and fourth ribs, and opening externally through the scapula as above stated. The lung on the *right side* was uninjured, and healthy in appearance, except somewhat more than usual *post-mortem* congestion in the posterior portion. Left lung congested throughout, and firmly adhered to the walls of the chest. Through the upper lobe was the suppurative track of the ball. No fluid was found on the *right side*. Five ounces of pus was found on the left, close upon the diaphragm, having a connection with the upper part of the lung. There was a small quantity of serum in other parts of the side. The two wounds from tapping were traced through the walls of the chest, into and through the *diaphragm*, into the *liver*.

Remarks.—First, hermetically closing the wounds did not, in this case, prevent the formation of pus. Second, paracentesis thoracis of the left side, the side containing the pus and serum, could not have reached the fluid without endangering the lung and other organs. Third, the operation performed on the right, or wrong side, was an error in diagnosis, proved by the failure to obtain fluid, and by the *post mortem* presenting a healthy condition of the parts, and was a greater error in puncturing so important an organ as the liver. Testimony of those watching the case is, that the patient—up to that time doing well—soon began to fail.

CASE II.—G. W. Ryerson, Co. F, 9th Me. Vols. Gun-shot wound of left side. External examination showed the chest full and resonant; no difference perceptible on either side; no more than the usual amount of dullness as the spine or dorsal region was approached. A penetrating wound was seen passing through the tegument between the eighth and ninth ribs, midway between the sternum and spine, fracturing the ninth, from which the omentum was protruding nearly one inch. Between the sixth and seventh ribs, and nearly two inches anterior to a line drawn from axilla to trochanter, was a punctured wound entering the cavity of the thorax.

On opening the thoracic cavity, the lungs were found uninjured. Slight adhesion had taken place above the point of puncture, and a penetrating wound through the diaphragm nearly one inch distant from its attachment to the ribs, directly underneath the seat of fracture in the rib. On opening the abdomen, the intestines were found to be intact; the liver extending three inches to the left of the median line; the left kidney torn from its seat and nearly reduced to a pulpy mass; the ball passing onwards, downwards, inwards and backwards until it rested beneath the psoas muscle just below the crest of the ilium, one and one fourth inches to the left of the last lumbar vertebra.

The examination was well and skilfully performed by Drs. Wilkins and Harris, four hours after death, and was extremely satisfactory, as it proved that the walls of the chest can be punctured—even where there is no fluid in the cavity—without injury to the lung, and that hernia of the omentum may be taken for hernia of the lung.

All of which is respectfully submitted.

(Signed)

C. H. CARPENTER, *Surg.* 148th N. Y.,

July 10th, 1864.

Reporter for Surg. in charge.

CASE III.—James Applegate, Co. F, 13th Ind. Vols. Wound—musket ball; chest; June 30th, 1864. Died July 12th, at six o'clock, A.M.

External Examination.—Chest dull, whole left thoracic region. Right chest resonant. Ball entered, fracturing tenth rib, one third length of rib distant from spine. Exit—from left lumbar space, two inches from vertebra.

Internal Examination.—Upon passing the knife through the cartilages, bloody serum rushed out, with much force. The sternum being elevated, a septum formed of false membrane was found, in which the serum had been retained. The heart was found displaced, by this, to the right of sternum. This septum must have contained about twenty ounces of fluid. Other similar septa were found between lobes, and between lung and walls of chest; whole amount of fluid judged to be about forty-eight ounces. Lung found adherent throughout its entire surface. No lesions of right lung were discovered.

Track of ball.—Ball entered, fracturing tenth rib as above stated, ploughed through lower lobe of lung, passed through diaphragm, striking lumbar vertebra, and passed out at left lumbar space.

Remarks.—The forming of septa was evidently an effort of nature towards a cure. *Post mortem* by Surgeon Carpenter. Present, Surgeon Storrs.

CASE IV.—James Sayton, 22d U. S. Colored, Co. D. Died suddenly—examined sixteen hours after death. Rigor mortis complete. Thorax resonant, abdomen tympanitic, muscular development fine; three to four ounces of serum in pericardium. On opening right auricle, a fibrinous body was found, adherent to the walls of the auricle, and extending through the auriculo-ventricular valve into the right ventricle, was still adherent to walls of cavity by minute columnæ. The end of the mass lay in the pulmonary artery loosely.

(Signed) C. E. MUNN, *Asst. Surg.* 27th Mass. Vols.

Base Hospital, 18th Army Corps, July 19th, 1864.

CASE V.—*Post-mortem* examination made by Surgeon Storrs, July 21st, 1864, upon the body of Daniel Jackson, Co. K, 5th U. S. Colored Troops, soon after death from disease (dysentery). Upon opening the abdomen, some inflammation of the peritoneum was noticed. The cæcum, colon, and three feet of ileum were inflamed. No ulceration was discovered, but the mucous membrane in the region of the cæcum, about twelve inches either way, was found congested and thickened. About twelve inches of the rectum was also much inflamed. The mesenteric glands and the glands of the colon were somewhat enlarged.

(Signed) Asst. Surg. D. A. WENDELL,

Base Hospital, 18th Army Corps, July 29th, 1864. Recorder.

CASE VI.—James Hagan, private, Co. G, 76th Regt. Penn. Vols., wounded July 17th, 1864. Admitted into Ward 4, July 20th, 1864. A bullet had passed obliquely through the lower third of right thigh, from without inwards. The inner opening had been enlarged by a vertical incision to the length of about three inches.

Upon the 22d inst. hæmorrhage set in, but ceased after about fifteen minutes' pressure by the tourniquet upon the artery above. The loss of blood was not far from four ounces. The patient was

then put to bed, and the nurse instructed how to make pressure upon the femoral artery in case hæmorrhage again commenced. About an hour after, the blood began to flow, and pressure was again applied a short time, with the same result as before. A tourniquet was then placed upon the thigh, and gentle pressure maintained until about four o'clock the following morning, when hæmorrhage again ensued, and the tourniquet was tightened. Upon loosening the tourniquet after a short time, it was found that the bleeding would not cease, and at 9 o'clock, A.M., the patient was put upon the table, the incision opened, and the femoral artery near its lower extremity found divided, with its venæ comites. The artery was ligated at its proximal extremity. The accompanying vein was also ligated at its proximal and distal ends. The loss of blood during the operation was not more than four ounces. The patient was then put upon the most nutritious diet, and the following prescriptions given:—*R.* Spiritus vini gallici, ad libitum. *R.* Tinct. ferri. chloridi, gtt. xx., every six hours.

July 25th.—Gangrene ensued. Pulse small, 130 beats to the minute. Amputation was deemed inadvisable, owing to the low state of the patient.

July 26th.—Gangrene spreading. Disinfecting agents freely used; prescriptions and diet continued.

July 27th.—Patient died about 11 o'clock, A.M.

(Signed)

D. A. WENDELL, *Recorder,*
Asst. Surg. in charge of Ward 4.

PROF. FERGUSSON'S LECTURES ON THE PROGRESS OF ANATOMY
AND SURGERY DURING THE PRESENT CENTURY.

LECTURE VI.—ON EXCISION OF THE KNEE.

MR. PRESIDENT AND GENTLEMEN,—After the initiatory labors of those whose names I mentioned at the close of my last lecture, the operation of excision began to attract the notice of others, who took both a practical and theoretical review. In particular, Dr. Humphry of Cambridge, and Mr. Pemberton of Birmingham, drew attention to the fact—seemingly new to both—that after excision of the knee, in persons under full size, the limb did not grow in proportion to the other. Not only was the limb shortened by the length of the ends of bone removed, but actually, as was clearly pointed out in certain cases which were carefully watched, the limb all but ceased to grow, and was outstripped by its fellow some five or nine inches.

This is hardly the time or place to discuss the merits or questionable points of Dr. Humphry's ingenious and admirable papers on the growth of bones in their long axis, at their epiphysial cartilages. I mean, therefore, to allude to them briefly. They seem to have been suggested chiefly, if not solely, by excision of the knee, and

their main object appears to be that of pointing out generally that long bones grow in length entirely at the cartilage at the end of the bone next the epiphysis, and particularly that the femur grows in length chiefly at its lower end, where it joins or is joined by the epiphysis. The practical deduction from this is, that if, in resection of the knee in a growing subject, the epiphysis and epiphysal cartilages be cut away, the femur will not grow in proportion to the rest of the body; and hence a serious objection has been raised to the operation in young persons. This matter was first hinted at in Dr. Humphry's paper read before the Medical and Chirurgical Society in March, 1858, and was more elaborately worked out in subsequent papers laid before that Society in 1861 and 1862. The same author has alluded to the subject in his valuable "Treatise on the Human Skeleton," published in 1858, and he there comes to the conclusion that in such instances, when the tibia and femur might unite by ossific junction, "the objection urged against the operation might prove valid."

The union of physiology, science, and practice here has given great force to the observations of Dr. Humphry; but attention was still more prominently brought upon the subject by a remarkable paper published by Mr. Oliver Pemberton, of Birmingham, in 1859. The main object of this paper was to show that in a youth operated on for excision of the knee in 1854, the limb in 1859 was nine inches shorter than its fellow. Another analogous case is cited from the practice of Dr. Keith, of Aberdeen, where, in the course of "nearly six years, the deficiency of growth is measured by five inches." To add to this objectionable feature in Mr. Pemberton's case, there was no bony union; and in Dr. Keith's case, at the end of the time referred to "the union was not strong, and there was a bending outwards."

But the true parallel, the true value of excision of the knee has never yet been drawn to its full extent, in so far as I am aware. Life—life and comfort may be considered as the highest and best result of surgical interference in a case of incurable disease of the knee-joint. Even yet we have not sufficient data on those heads. My own impression is that the question of life between amputation and excision will be pretty nearly balanced; indeed, I shall venture a step further, and say that if excision were to get all the subsequent comparative advantages willingly given to amputation, the hazard of one operation would be less than that of the other. If I am not mistaken, an idea prevails that excision of the elbow is in reality a safer operation than amputation in the arm; but such is not mine. Few fatal cases of this excision have been recorded, but I have seen as many as to convince me that the mortality is probably as great as that of amputation above the elbow. Happily, such a result is rare in either instance.

Whatever the mode of amputation, it must be acknowledged that

neither skill, forethought, manipulative perfection, nor after-treatment, whether local or constitutional, can invariably avert some of the evils (less than death) which are known from ample experience to follow such an operation. The occasional evils of secondary hæmorrhage, of unusual retraction, of scanty covering, of chronic sore therefrom, of caries or necrosis, of tender cicatrix, of neuroma on the great nerves, and of secondary operative interference, have all been in a manner ignored in this comparison. And yet how often have all men of experience seen cases of the kind. Neuroma is certainly rare in the lower limb; yet, allowing the most perfect result—allowing the stump to be above criticism, what is it after all? It is only a portion of thigh whereon to fix an artificial limb. If this cannot be done, the sufferer must ever after be dependent on crutch and stick.

I beg it to be observed that I do not bring these features forward as objections to amputation in the thigh in cases where the operation may be deemed absolutely necessary. If that dire proceeding must be, patients must take their chance. Surgery can never entirely avert the occasional necessity for amputation, but in the case for which I now speak I maintain that she frequently can. And now let us see the case of excision. The foot and leg are left; the limb is shortened positively by the length of bone taken away—say from two inches to four. Allowing for the loss of growth in length before operation, and for arrest of growth after the operation—say five inches, say nine inches; allowing even more, the lower end of the thigh, the leg, ankle, and foot still remain. It is worthless in surgery to compare a bad stump with a bad lower limb after excision. Take the perfection of a stump, even in the estimation of the most critical, and with even a medium limb after excision, and the comparison will not stand for an instant. With the best results, it seems absolutely absurd to compare the two.

In the general comparisons hitherto made I take leave to set aside the evils of excision, as drawn or indicated by the authorities already named, as exceptions to the rule, and as being equalled in evil in most respects by those following amputation; but I say unhesitatingly that if the comparison is drawn between the perfect stump and the perfect result of excision, the comparison is just as unreasonable as that between an artificial limb and one of flesh and blood.

Inequality in the length of the upper extremities is of little moment, but it is awkward, to say the least of it, in the lower, as we frequently observe after fractures and after disease of the hip or knee in early life. Such inequality may, in some instances, be attributed to bad treatment, but it often occurs despite the best skill in surgery. Yet who would in such a result say that the patient would have been better with the limb away by amputation? Who does not think that when a person gets well of a diseased knee or

hip, with shortening even to the extent of five or nine inches—no uncommon result—he is yet somewhat fortunate—fortunate in not having had amputation performed on his thigh. We do see occasionally cases of great distortion of the lower limbs after disease of the knee, but even these patients sometimes congratulate themselves on having the leg and foot. In some few such cases amputation in the thigh has actually been performed years after the so-called cure. Yet in such cases it is not our custom to lay blame on the treatment which may have been adopted, although I believe that it has often been highly defective. Whatever the amount of distortion after the cessation of disease in the knee-joint, I hold that, excepting very special cases, amputation is unjustifiable, as resection of the distorted knee is both safer and better. But I shall not press this point at present; let me rather again draw attention to the fact, that we never cry out against either nature or the surgeon in cases of shortening and distortion of limbs after disease. Yet such defects are common. Whilst meditating these remarks, I have rarely known a day pass in taking one's ordinary rounds that I have not observed persons walking in the streets with shortened and distorted limbs after disease of the knee. Most of them have moved more nimbly, and with greater apparent security and comfort, than if on the artificial limb after amputation of the thigh. Yet shortening has in a manner become the bugbear of excision of the knee. I admit that it is a defect, but abstraction or excision and arrest of development are evils elsewhere as well as here. Again, I admit that in this locality disparity of size, particularly in length, is an awkward circumstance. Let us see, however, in what this consists? A difference of three, five, or nine inches! What is the contrast which has been drawn with this defective limb? It is with its neighbor! And here I imagine we hit upon the weakest of all the objections hitherto made to excision of the knee. The risk of loss of life, distortion, uselessness of that which is preserved, are all serious objections or blemishes to this proceeding. A short leg to a long one is, I again admit, a defect; but in this respect surgery no more fails than Nature does after disease. What, I ask, is the alternative for excision of the knee proposed by those who object to this operation? It is amputation in the thigh! I cannot allow that which might be an easy answer to the question—Why perform an operation at all? Why not cure the disease, and thereby avoid amputation? That is a question of a totally different kind. I am not now discussing the question of amputation, or continued, and possibly other treatment to save the limb. It is the question between excision and amputation as regards the future condition of the limb. In ordinary amputation under such cases, half the thigh, or possibly two thirds, may be left. The body is mutilated to nearly the entire extent of one extremity. Say what you may as to the quality of the stump, there is left a shortened femur, a shrivelled thigh; emphatically a stump.

Even Samuel Johnson's explanation of the term gives an exalted idea of the noun substantive which scarcely holds good with us:—"The part of any solid body remaining after the rest is taken away," is a flattering description of one of our stumps of the thigh. It is in reality with us barely more than a peg whereon to hang an artificial limb. In youth, in middle age, in advanced years, it never improves. It never can be more than a shortened bone, with shortened and shrivelled materials around; and this even with the perfection of a stump. The defective results of excision I am disposed, in accordance with what I have said before, to class with defective stumps. In justice to the subject I now deal with, I take a fairly perfect result of excision. Whatever the shortness, that may readily be made up by a high-soled boot or shoe. There are left the lower end of the thigh, nearly the whole of the leg, the ankle and foot; the former two slightly damaged, the latter unscathed. The foot, leg and thigh do as much in the cases of distortion or shortening after disease; and who, under such circumstances, would compare an artificial substitute to the limb of life?

But I cannot leave the argument here. A well-healed stump never in reality improves, unless, possibly, it gets more callous, whilst often it gets more tender and irritable; but the seeming perfect result of excision at the end of six or twelve months (just when stumps are generally at the best) is no criterion of true perfection. If the limb is properly managed afterwards, it goes on improving for months—aye, for years. Without again discussing the question as to length, and without applying the remark to all, I can affirm, from ample experience in my own practice, that thigh, leg, and foot enlarge in bulk; and, in particular, that with this change the leg and foot improve in muscular energy. It may to some be more impressive when I say that the calf of the leg shows again in increased muscularity and vigor. This observation has never yet, I believe, been dwelt upon by those who have written of the good qualities of limbs after excision; but it is an important fact, and one which, in my opinion, goes far to balance that of shortening, which has been so eagerly put forward by writers previously referred to.

I do not think that the value of the human foot has been sufficiently estimated by those who amputate, or even by some who advocate excision. It is certainly as wonderful in its mechanism, if not more so, as any of the organs of special sense; and, without drawing a useless comparison between it and the hand, it is certainly in its entire state a thousand times more perfect, as part of the future support of the body, than the point of a thin stick, or any fabricated imitation of a foot. We see persons walking about with limbs shortened from various causes; some with high-soled boots, some with apparatus of iron, some with a pin of wood to make up the proper length, each with a foot of tolerable dimensions and vigor. Whatever we may say to grace or symmetry in these cases, we yet,

under ordinary circumstances, consider that a fair compromise has been made with formidable disease. Even as an unfortunate maimed one who has suffered amputation in the thigh halts along, we may pity him as the victim of incurable disease, yet we claim his case as a bright illustration of the power of surgery. The foot is rarely thought of, whether it has been swept away by amputation, or it be a portion of a shortened distorted limb. Yet I doubt if there is any substitute at all to be compared with it.

Time will not permit me to draw extended comparisons and to illustrate the value of the foot. The sketch here exhibited shows a representation of *Cæsar Ducornet*, who was born without hands or arms, and with defective feet, having only four toes on each, yet he became a famous historical painter, and with his toes wielded the brush more perfectly and to greater purpose than most of his contemporaries. But for a forcible example, I beg attention to the figure and skeleton of *Hervio Nano*, or *Harvey Leach*, in the Museum of University College. The latter shows the bones of the head, chest, and upper extremities of remarkable development. The pelvis is comparatively weak, and the femur in each limb is scarcely, perhaps not, to be recognized. The right tibia and foot are very defective, but the left leg and foot are better developed, although far from being in due proportion to the trunk above. Although the feet are defective, particularly the right one, I call special notice to the fact that they were in life possessed of most wonderful energy and agility. *Leach* was one of the most remarkable gymnasts of his day. Notwithstanding the distortion of his lower limbs, he had marvellous power in his feet. As an arena horseman he was scarcely excelled, whether in sitting or standing. He walked and even ran fairly, and his powers of leaping, partly from his hands, partly from his feet, were unusual; yet his lower limbs were so short that, as he stood erect on the floor, he could touch it with his fingers. This man earned his livelihood as much by the energy of his lower limbs as of his upper, yet, as you perceive by the skeleton, that energy must have been almost wholly in the feet. The length of the lower limbs on the skeleton is, from hip to heel on the right side, nine inches, and between the same points on the left about sixteen inches, showing a disparity of seven inches between the two. I deem it particularly worthy of remark that the femur seems to be entirely wanting on both sides—a fact of peculiar interest to me, as I have dealt so freely with the bone at both its extremities. On the left side there are only three bits of bone, making about two inches in length; and on the right there is only one portion, about the size of a chestnut. It may be observed, that whilst the tibia on the left side seems nearly normal in proportion to the rest of the skeleton, the right is three inches shorter, and more like an *os innominatum* than a human tibia. Yet, with all these defects and peculiarities, the energies of the possessor were remarkable. His power in these limbs was chiefly in

the feet. Without these members he would have been incapable of those efforts which struck thousands with amazement; but if one of his feet had been wanting he could not possibly have done what he did. One foot added to the vigor of the other, and each was in that degree of perfection as to enable its master to do such things as people with limbs of ordinary mould usually dare not attempt. Surely he will be a sceptic indeed who does not allow that in this instance the foot was the grand feature in the lower limbs; and my object in bringing the illustration forward on such an occasion as this is to show the importance of this organ in regard to its function of bearing the weight of the body above. Look at those who walk with limbs distorted and shortened from former diseased knee or hip, who bear upon a support three, six, nine, or twelve inches long—and get on well, too—and think what their powers of progression might be if without the foot! No doubt some with stumps in the thigh have walked marvellously well: I have known one in this predicament walk ninety miles in three consecutive days; but these are exceptions to the rule, and they present the very best examples of stumps.

The object of these remarks is to draw attention to the value of the foot, whether it comes directly in contact with the ground or is the point of attachment for something to make up the proper length of limb on that side. In an ankylosed knee the foot is of great importance in progression. Besides the mechanical construction of the foot, its comparative size is of enormous value as a support; and what tissue of a stump in the thigh can compare with that of the sole and heel of the perfect foot?

But I feel almost ashamed to carry this argument further. Persons out of our profession would think it strange to hear an argument in the College of Surgeons to show that the possession of a healthy foot is better than the absence of a foot; that a foot, leg, and lower third of the thigh, all free from disease, are better than nine inches only of a shrivelled thigh; that a nearly whole limb, two feet or two feet and a half long, is better than a shortened and shrivelled thigh which measures some nine or twelve inches from the hip! Yet such is the seeming argument to which I have been forced, for those who have opposed the operation of excision of the knee have almost invariably represented a good stump, as it is called, as superior to any limb preserved by such a proceeding. My own impression, however, is very different. I cannot say of a single instance coming under my own observation, that amputation would have been better. I am not here to say that excision must invariably be superior to amputation; but this I will say without hesitation, that however short the limb may be after this operation, the parts preserved, provided the original disease is cured and no special or great distortion be left, must be beyond measure superior to the best stump that can be made. I care not whether the limb may be five or nine inches shorter than the other, my impression is that were the femur so much

diminished in length by cutting and by want of development that the foot on the damaged side should actually be above the level of the sound knee, its presence would insure a better support than a stump of the thigh. I thus admit and take what may be considered an extreme case, such as has never yet been brought forward, and such as is likely to occur rarely if ever. I do so to meet the exigencies raised by Messrs. Pemberton and Humphry, and particularly to meet the all-important question as to the propriety of performing this operation on young persons in whom the bones have not attained their full length. The reasoning—if such it may be called—on this question has been remarkable. It amounts to this: that as the limb does not grow after this operation in young persons in proportion to the rest of the body, particularly in proportion to the other limb, it should not be performed; for this want of growth, great or small, is an insurmountable objection. Yet, as I have shown, the shortening is likely to be as great after a tedious recovery extending over years from disease of the knee in early life. For example, look at this leg and foot, and compare them with the other (referring to a cast). These shrivelled parts are the result of disease. But that is, indeed, a favorable acceptance of this objection; and, to say the truth, it is not the view taken by those to whom I refer, nor is it a view which I myself admit for a moment. The question is not in such cases between excision and the cure of disease; it is between excision and amputation. I take it for granted that, with few exceptions—some of which I shall allude to ere long—excision has been performed only in instances where amputation would otherwise have been the operation—instances where further attempts at cure were deemed likely to be useless.

That amputation, under such circumstances, has been a common practice—in fact, the rule of practice—every one who remembers what surgery was thirty years ago must admit. Now, it is in such cases that some opponents of excision of the knee have said that it cannot be done, that it must not be, because the limb does not grow afterwards, or because it grows shorter! Mr. Edwards and others have shown that the limb does grow in length after the operation. I can testify the same from my own personal experience. I admit that in some cases it may be less than in others; but I maintain that, however little, the preserved part of the limb must always be better than none. The leg and foot must always be better than any artificial substitute. The case related by Mr. Pemberton, on which so much stress has been put, and which, in as far as I can perceive, has been held as the grand bugbear against this operation, was by himself and colleagues condemned to amputation. With wise consideration, however, in my opinion, he selected excision. Without following all the interesting particulars of this case, I deem it sufficient for my present purpose to give Mr. Pemberton's own description and figure of the state of the limb some six years afterwards:—"About

the excised joint the parts were sound, and free from pain on manipulation, a very movable ligamentous or fibrous medium connecting the articular extremities. Notwithstanding the shortness and the flail-like joint, it was astonishing to see the power he possessed of extending the leg, and of bearing the entire weight of the body on it in walking, unaided by support of any kind; and it was quite clear that the disparity in length alone prevented him from realizing all the advantages that he might under other circumstances have obtained from the operation. With all these drawbacks, he works hard as a boat-builder, the limb being aided by a cork sole of some six or seven inches in height, and by a leather case at the knee."

No one would presume to call this limb equal to one untouched and from the hand of Nature; but my own impression is that it is better than the best ever fabricated by the hand of man. There is no accounting for taste or even opinion, however, and here is what Mr. Pemberton thinks:—"The limb cannot be deemed otherwise than an incumbrance, and with the best appliances to remedy the want of length, proving, after all, little better than a sad deformity." Now, the alternative in this instance was a stump with a crutch or an artificial appendage! It may be a matter of taste amongst the victims of disease, and even amongst ourselves, which would be best. My own choice is strongly in favor of flesh and blood.

The features of hæmorrhage and of shock in this operation I think scarcely worth notice on such an occasion as this. In some few cases there has been trouble from oozings for hours after, and an articular artery has now and then given trouble. In one case I have seen severe shock in a weak child; but under any circumstances I deem these matters of less magnitude than in amputation in the thigh. The main artery of the limb is untouched, and the worst form of secondary hæmorrhage can never occur.

The want of bony ankylosis has been much referred to as a serious objection. I certainly think it best when it occurs, and it rarely does not if time be allowed. But even without it the results may be entirely satisfactory. You have heard what Mr. Pemberton thinks on the subject in his famous case. I think it but right to say that one of the best I have had was where bony union did not occur; and I have seen a person on whom Mr. Partridge operated, under very disadvantageous circumstances, who nevertheless made a good recovery, and who, without ankylosis, can carry a sack of flour on his shoulders weighing two hundred and eighty pounds, and can do readily the ordinary work of a journeyman baker.

In my own early aspirations regarding this operation, I always kept amputation in reserve as the last resource, either at the time of excision, or weeks or months afterwards; but my views in this respect have been considerably modified. I prepared myself to meet with failures at every stage; and then, as I thought, the patient, if not slain outright, could but submit to amputation. Such a view as

this was extensively acted upon by Dr. Humphry, for of thirteen cases amputation was performed in four instances, happily all recovering. But I have since altered my opinion considerably on this point, and now look upon amputation as a step rarely to be anticipated in such cases. I can conceive it possible that a seeming necessity might arise at the moment of excision to resort to amputation: I have taken this step twice myself. But in instances where all does not go on well afterwards, instead of taking fright or losing heart at an early period, I ask for time; and when that does not suffice, I believe dealing freely with the wound, opening sinuses, clearing away strumous effete material, picking away loose necrosed pieces of bone, gouging away bare material of the kind—aye, even opening up the whole surfaces, and sawing off fresh pieces of bone—to be better than amputation. To do all this, particularly to repeat excision—to perform resection, as it may with propriety be called—seems an admission of failure; but it is no more so than having to repeat an original amputation of the thigh, as has frequently been done. The results are or may be very different, however, for there is still the limb left to compare with the abbreviated stump.

There is more, however, in these words than may appear; for I do not speak from theory, but from actual experience. In October, 1862, Jane Bolton came under my care in King's College Hospital to have her limb removed, after unsuccessful excision of the knee. There was no ossific union, and a considerable portion of the lower end of the femur protruded through a large opening in front of what remained of the original knee. Bearing in mind what I had occasionally done in cases of unsatisfactory results of excision at the elbow, I opened-up the parts, took away the projecting portion of bone, trimmed here and there, and ultimately succeeded in getting a sound cicatrix, a perfect ankylosis, and a limb so strong that, although shorter than its fellow by several inches, the patient was delighted with it; yet when she came to town, and for months even after the second conservative operation, she was anxious that amputation should be performed. I have since repeated similar operations with the most satisfactory results, and as a general practice I decidedly recommend it in preference to amputation, as the secondary alternative.

In many instances of so-called cure of disease of the knee the limb is left shortened, bent, flaccid, useless; and the body is borne on a crutch. In all such cases, when the usual modern means of extension have proved of no avail, surgery has heretofore held out no alternative between a crutch and amputation. When patients are discontented—where amputation has often been requested and frequently performed, to give riddance from a useless member—I can testify by experience to the excellent results of excision. By removal of the stiffened or ankylosed articular end of the bones the limb has been stretched; a treatment like that for compound fracture has

been adopted; union, new ankylosis, has taken place, with the limb in a proper line; and a comparatively useful member has been the result. This proceeding emanated from excision under the ordinary circumstances of disease. It was a bolder idea than that of Barton, who recommended that a wedge-shaped piece of the head of the tibia should be removed in certain cases of bending and ankylosis after disease of the knee; and it was carried out for the first time, I believe, by Mr. Price, whose enthusiasm was equal to if not greater than my own in regard to all pertaining to this operation. The patient unfortunately died, from inflammation in the chest, induced possibly—probably—by the operation; but I have had repeated experience since to prove that such a proceeding is preferable to the so-called “complaisant” or “expedient” operation of amputation, where a person is tired of carrying about a useless appendage, of no value to the holder and of no credit to the art or science of surgery. Here is a fair example of the kind. A lad carried a limb bent at right angles and walked laboriously on a crutch. Excision was performed. Things did not go on so well as I expected. Twice afterwards I had to renew the incision, and saw fresh surfaces on the bones. About twelve months afterwards he left the hospital, with a loose dangling leg. But by-and-by ankylosis set in, and here is the preserved limb. It certainly cannot stand comparison with the other limb, but as a proof of its vigor, the youth recently walked twelve miles to see the Derby run. In a race himself he would no doubt be an “outsider”—worse than “dark;” but the leg is better, in my opinion, than a crutch. Here is another example, which was treated in the same way, and a leg like this was the result of one operation.

But I have already dwelt longer on this subject than present time warrants, and the hour tells me that I must give up. There are still many matters associated with it which I should wish to refer to, and, possibly, I may take another opportunity to aid in bringing out all that I consider important with regard to the great surgical question to which I have directed attention in these two Lectures.

The question has now been so extensively and so variously handled by the different authorities whom I have quoted, that I cannot pretend to much novelty in my present dealing with it. If I estimate my own attempt rightly, it has been to show the superiority of a leg and foot of flesh and blood to any artificial substitute—of a foot and leg, whatsoever the shortening, whatever the “arrest of development,” to a stump of a third, one-half, or even two-thirds of the length of the thigh.—*London Lancet.*

In the summer of last year the corner-stone of a building to be known as the “Home for the Blind” was laid at Cape Palmas by Bishop Payne of the Protestant Episcopal Mission. A simple building of stone, 30 by 14 feet, one story high, with two small native buildings in the rear, is all that is at present undertaken.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

BOSTON: THURSDAY, SEPTEMBER 8, 1864.

THE CASE OF SURGEON-GENERAL HAMMOND.—We printed last week the President's order confirming the sentence of the late Surgeon-General. We would willingly consign this terrible case of official delinquency to oblivion, but our readers must surely expect a fuller statement of the case than appears in the order referred to, which was all that our space allowed in our last number. We do not care, however, to expatiate upon the enormity of the offence of which Dr. Hammond has been convicted. We feel that a reproach has been brought on the whole profession, that a stigma is fixed on the nation itself by the corruption of so distinguished an official, appointed as he was at the instigation of some of our most worthy and influential citizens, and upheld to the very last by some of the most eminent names in the circle of science. We have found it very hard to believe in his guilt, and felt that the trial which he and his friends so zealously courted would result in a triumphant acquittal. The long delay between the dissolution of the court and the official announcement of the sentence, together with the knowledge that the President was making a thorough personal examination of the record, sustained us in the hope that there might be good grounds for setting aside an unfavorable verdict. The order of the President only makes it the more painfully certain that the evidence fully sustained the charges presented. Dr. Hammond has appealed to the public for a suspense of judgment, and we should only be too happy if he is able in any way to explain away the facts which now rest like a pall upon his reputation. We condense from the *Washington Chronicle* the following report of the Judge Advocate General, as it appears in the *New York Medical Times*.

"We present our readers this morning with the report of the Judge Advocate General in this remarkable case, which engrossed a court-martial for so many weeks. The following officers composed the court:—Major-General R. J. Oglesby, Vols., President; Brigadier-General W. S. Harney, U. S. Army; Brigadier-General W. J. Ketchum, U. S. Vols.; Brigadier-General G. S. Greene, U. S. Vols.; Brevet Brigadier-General W. W. Morris, Colonel 2d U. S. Artillery; Brigadier-General A. P. Howe, U. S. Vols.; Brigadier-General J. P. Slough, U. S. Vols.; Brigadier-General H. E. Paine, U. S. Vols.; Brigadier-General J. C. Starkweather, U. S. Vols.; Major John A. Bingham, Judge Advocate.

JUDGE ADVOCATE GENERAL'S OFFICE, May 17th, 1864.

To the Honorable, the Secretary of War:

"Brigadier-General William A. Hammond, Surgeon-General, United States Army, was tried upon charges of 'disorders and neglects, to the prejudice of good order and military discipline,' 'conduct unbecoming an officer and a gentleman,' and 'conduct prejudicial to good order and military discipline.'

"The specifications which set forth the statement of facts alleged, and found by the court to constitute these offences, are as follows.—

"CHARGE 1ST. 'Disorders and neglects, to the prejudice of good order and military discipline.'

"Specification 1st. 'In this: that he, Brigadier-General William A. Hammond, Surgeon-General, United States Army, wrongfully and unlawfully contracted for,

and ordered Christopher C. Cox, as acting purveyor in Baltimore, to receive blankets of one William A. Stephens, of New York. This done at Washington city, on the seventeenth day of July, in the year of our Lord one thousand eight hundred and sixty-two.'

"*Specification 2d.* 'In this: that he, Brigadier-General William A. Hammond, Surgeon-General as aforesaid, did, on the thirtieth day of May, in the year of our Lord one thousand eight hundred and sixty-three, at Washington city, wrongfully and unlawfully prohibit Christopher C. Cox, as medical purveyor for the United States in Baltimore, from purchasing drugs for the army in said city of Baltimore.'

"*Specification 3d.* 'In this: that he, the said Brigadier-General William A. Hammond, Surgeon-General, United States Army, did unlawfully order and cause one George E. Cooper, then medical purveyor for the United States, in the city of Philadelphia, to buy of one William A. Stephens blankets, for the use of the Government service, of inferior quality; he, the said Brigadier-General William A. Hammond, then well knowing that the blankets so ordered by him to be purchased as aforesaid were inferior in quality, and that said Purveyor Cooper had refused to buy the same of said Stephens. This done at Philadelphia, in the State of Pennsylvania, on the twenty-eighth day of May, in the year of our Lord one thousand eight hundred and sixty-two.'

"*Specification 4th.* 'In this: that he, the said Brigadier-General William A. Hammond, Surgeon-General as aforesaid, on the fourteenth day of June, in the year of our Lord one thousand eight hundred and sixty-two, at the city of Washington, in the District of Columbia, unlawfully, and with intent to aid one William A. Stephens to defraud the Government of the United States, did, in writing, instruct George E. Cooper, then medical purveyor at Philadelphia, in substance as follows:—

"SIR:—You will please purchase of Mr. W. A. Stephens eight thousand pairs of blankets, of which the enclosed card is a sample. Mr. Stephens's address is box 2,500, New York. The blankets are five dollars per pair.'

"*Specification 5th.* 'In this: that he, the said Brigadier-General William A. Hammond, Surgeon-General, United States Army, on the sixteenth day of June, in the year of our Lord one thousand eight hundred and sixty-two, at the city of Washington, did corruptly, and with intent to aid one William A. Stephens to defraud the Government of the United States, give to the said William A. Stephens an order, in writing, in substance as follows:—Turn over to George E. Cooper, medical purveyor at Philadelphia, eight thousand pairs of blankets; by means whereof the said Stephens induced said Cooper, on Government account, and at an exorbitant price, to receive of said blankets, which he had before refused to buy, seventy-six hundred and seventy-seven pairs, and for which the said Stephens received payment at Washington in the sum of about thirty-five thousand three hundred and fourteen dollars and twenty cents.'

"*Specification 6th.* 'In this: that he, the said Brigadier-General William A. Hammond, Surgeon-General, United States Army, on the thirty-first day of July, in the year of our Lord eighteen hundred and sixty-two, at the city of Philadelphia, in the State of Pennsylvania, well knowing that John Wyeth and Brother had before that furnished medical supplies to the medical purveyor at Philadelphia, which were inferior in quality, deficient in quantity, and excessive in price, did corruptly, unlawfully, and with intent to aid the said John Wyeth and Brother to furnish additional large supplies to the Government of the United States, and thereby fraudulently to realize large gains thereon, then and there give to George E. Cooper, medical purveyor at Philadelphia, an order, in writing, in substance as follows:—

"You will at once fill up your store-houses, so as to have constantly on hand hospital supplies of all kinds for two hundred thousand men for six months. This supply I desire that you will not use without orders from me.'

"And then and there directed said purveyor to purchase a large amount thereof, to the value of about one hundred and seventy-three thousand dollars, of said John Wyeth and Brother.

"*Specification 7th.* 'In this: that he, the said Brigadier-General William A.

Hammond, Surgeon-General, United States Army, about the eighth day of October, in the year of our Lord eighteen hundred and sixty-two, at Washington city, in contempt of, and contrary to the provisions of the act entitled 'An act to reorganize and increase the efficiency of the medical department of the army,' approved April 16, 1862, did unlawfully direct Wyeth and Brother, of Philadelphia, to send forty thousand cans of their 'extract of beef' to various places, to wit: to Cincinnati, St. Louis, Cairo, New York, and Baltimore, and send the account to the Surgeon-General's office for payment.'

"CHARGE 2D. 'Conduct unbecoming an officer and a gentleman.'

"Specification 1st. 'In this, that he, Brigadier-General William A. Hammond, Surgeon-General, United States Army, on the thirteenth day of October, in the year of our Lord eighteen hundred and sixty-two, at Washington city, in a letter by him then and there addressed to Dr. George E. Cooper, declared in substance that the said Cooper had been relieved as medical purveyor in Philadelphia, because, among other reasons, 'Halleck,' meaning Major-General Henry W. Halleck, General-in-Chief, requested as a particular favor that Murray might be ordered to Philadelphia; which declaration so made by him, the said Brigadier-General William A. Hammond, Surgeon-General as aforesaid, was false.'

"An additional charge and specifications preferred against Brigadier-General William A. Hammond, Surgeon-General, United States Army:—

"CHARGE 3D. 'Conduct to the prejudice of good order and military discipline.'

"Specification 1st. 'In this: that he, the said Brigadier-General William A. Hammond, Surgeon-General, United States Army, on the eighth day of November, in the year of our Lord eighteen hundred and sixty-two, at Washington city, did unlawfully order Henry Johnson, then medical storekeeper and acting purveyor at Washington city, to purchase three thousand blankets of one J. P. Fisher, at the price of \$5.90 per pair, and to be delivered to Surgeon G. E. Cooper, U. S. A., medical purveyor at Philadelphia.'

"A plea of not guilty was entered upon each of the charges and specifications, and after a full hearing of the testimony for the Government and the defence, and the examination of a large amount of documentary evidence, together with the consideration of the elaborate arguments of both sides, the court rendered a finding of guilty on all the charges, and sentenced the accused to be dismissed the service, and to be forever disqualified from holding any office of honor, profit, or trust, under the Government of the United States."

Want of space compels us to defer the remainder of the Report till next week.

MESSRS. EDITORS,—Permit me to use a few lines of your JOURNAL for a matter partly personal and partly pertaining to the Massachusetts Medical Society, and partly for the benefit of my professional brethren. First, then, on their behalf:—The faculty of observation I have always considered to be of the first importance to men of our profession, and I am sorry to see so many members of the Massachusetts Medical Society deficient in it. I have been an official of the Society for some thirteen years, during which time my name has of necessity been frequently in print in the various documents of the Society, besides not inoften as a contributor to your pages. It has but five letters in it, and yet my brother physicians in writing it make a mistake in one letter of it half the time, and mistake two letters of it in one case out of five. This surely does not display great power of observation on their part. I hope they can see through a case of phthisis or typhoid more easily than through a name of five letters. Then, for the honor of the Society:—Although it has been duly announced that I am no longer the Librarian but am Corresponding Secretary, my fellow members have not observed this, and every other day I get a letter from some one of them addressed to me as Librarian, and con-

taining the usual complaints that they have not received their "publications"—the fault of which generally lies in their not having notified the Librarian of their having paid their dues. Lastly, for myself, I should rather be spared the necessity of correcting such blunders on the part of my professional brethren, which I hope can be done by asking them to *observe*—I am *not* Librarian of the Massachusetts Medical Society, I am Corresponding Secretary, and I spell my name

Boston, Aug. 26th, 1864.

WM. E. COALE.

THE foundation-stone of St. Mark's Hospital was laid at Cape Palmas, in Africa, four years ago. A substantial stone building has since been erected, at a cost of about \$5,500. The building is represented as beautifully situated, and the ward-rooms clean and comfortable. It is now open to the sick among the seamen, colonists and natives. It is under the management of the U. S. Protestant Episcopal missionaries, and is supported by voluntary contributions.

The first statue to the memory of John Hunter, the greatest physiologist England has produced, and to whom the medical profession and the public are indebted for the finest anatomical collection in Europe, and upon which the Council of the College of Surgeons has expended nearly £1,000,000 sterling, has just been placed in the Hunterian Museum.

A monument is about to be raised, near the Royal Victoria Hospital at Netley, to the memory of the medical officers—seventy in number—who lost their lives on service during the Crimean Campaign.

Dr. Livingstone, the distinguished African traveller, recently arrived in London.

Dr. Pliny Earle has been elected Superintendent of the State Lunatic Asylum at Northampton.

During last year 1270 cases of smallpox occurred in Berlin, with 223 deaths, or 17 per cent. The mortality in the vaccinated was 10 per cent. ; in the unvaccinated, 42 per cent.

VITAL STATISTICS OF BOSTON.

FOR THE WEEK ENDING SATURDAY, SEPTEMBER 3d, 1864.

DEATHS.

	Males.	Females.	Total.
Deaths during the week	43	39	82
Ave. mortality of corresponding weeks for ten years, 1853—1863,	53.4	50.5	103.9
Average corrected to increased population	00	00	115.1
Death of persons above 90	0	0	0

DIED.—In Somerville, 4th inst., Dr. John Odin.—William H. Heath, Surgeon 2d Mass Vols., formerly of Stoneham.

DEATHS IN BOSTON for the week ending Saturday noon, Sept. 3d, 82. Males, 43—Females, 39.—Accident, 2—albuminuria, 1—anaemia, 1—apoplexy, 1—congestion of the brain, 3—disease of the brain, 3—bronchitis, 1—cancer, 1—cholera infantum, 17—consumption, 11—convulsions, 1—croup, 3—cyanosis, 1—cynanche trachealis, 1—debility, 1—diarrhoea, 4—diphtheria, 1—dropsy, 1—dropsy of the brain, 2—drowned, 1—dysentery, 1—scarlet fever, 2—typhoid fever, 3—yellow fever, 1—infantile disease, 2—intemperance, 1—disease of the liver, 1—marasmus, 3—old age, 1—peritonitis, 1—smallpox, 1—stone in the bladder, 1—unknown, 4—whooping cough, 2.

Under 5 years of age, 44—between 5 and 20 years, 5—between 20 and 40 years, 16—between 40 and 60 years, 12—above 60 years, 5. Born in the United States, 60—Ireland, 18—other places, 4.